

The census of New England Hepaticae now stands as follows: Total number of species recorded, 147; number recorded from Maine, 101; from New Hampshire, 116; from Vermont, 84; from Massachusetts, 82; from Rhode Island, 64; from Connecticut, 107; common to all six states, 43.

YALE UNIVERSITY.

GRAY'S MANUAL OF BOTANY, SEVENTH EDITION.¹

KARL M. WIEGAND.

PERHAPS it is not too much to say that no work has been awaited with so much interest by botanists as the new edition of Dr. Gray's famous text-book, which is now before us. It has been a long time since the last edition appeared in 1890, and in this age when progress in scientific fields is so rapid it was inevitable that the work should gradually fall behind the times. A new edition brought completely up to date has long been promised us until to the uninitiated it has seemed like a truly elusive will-o-the-wisp. The delay, however, was due solely to the very great amount of labor and time required for a complete revision and verification of the enormous mass of facts contained in the work. For nearly ten years the editors have been engaged at their task, and it is safe to say that the Manual has never before received a more critical revision.

To the botanist who has not followed recent progress in his science, and who is familiar only with the Gray's Manual of the past, this new edition will appear strange indeed. The most striking change lies undoubtedly in the substitution of the newer Eichler or Engler and Prantl system of classification, now so generally adopted everywhere, for the somewhat antiquated Benthamian system previously used. We now find the *Compositae* at the end of the book and the grasses near the beginning. The older botanist will also find unfamiliar the numerous text illustrations inserted on many pages of the work. These illustrations are small in size and are intended to illustrate not the whole plant but certain characters that are difficult to

¹Gray's New Manual of Botany, 7th ed. Illustrated.—Rearranged and extensively revised by Prof. B. L. Robinson and Prof. M. L. Fernald of the Gray Herbarium (Harvard Univ.)—American Book Co. 1908, pp. 926.

make clear verbally. They seem carefully done and will undoubtedly prove very useful. A third innovation lies in the adoption of the Vienna code of nomenclature throughout the work. This has necessitated a change in many familiar names, but in fewer than would have been the case had a more radical system been adopted. We also find evidence throughout the work of painstaking investigation into the types of the older authors, resulting frequently in the discovery of long-followed error in interpretation. Rectification of such error has also resulted necessarily in some change of names.

The older botanist will also find much evidence of the great activity in taxonomic botany of recent years. Many species are added; others are broken up; while some are united, in accord with recent revision of the various groups. In this however the authors have maintained a conservative attitude, critically reviewing all new propositions, omitting species of doubtful status, and treating as varieties all those forms that freely intergrade. The policy has also been,—when in doubt, leave it as it was.

We note also the introduction of many specific keys under difficult genera. To the reviewer this seems a very commendable feature, but one that might well have been introduced much more freely. The genus *Aster* and the genus *Solidago* show very strikingly this contrast in treatment. Another new feature, also a good one, is the addition of synonymy under each species. This will be especially appreciated by the amateur botanist who has not time to follow all the changes in nomenclature.

The liverworts have been omitted from this edition, but the ferns and their allies are still retained. The plates that were found at the back of the book are also omitted, most of their figures having been redrawn and more conveniently distributed in the text. At the beginning of the book the synopsis of families has been much reduced, and the analytical key has been made to occupy a more prominent place.

Notwithstanding these many innovations the book is still recognizable as a Gray's Manual. Throughout the work the well known "manual" practice of italicising the distinguishing characters has been followed in family, generic, and specific descriptions. Following the family characterization of the larger families we also find the familiar synopsis divided into tribes with the subdivisions marked with the asterisk and the dagger, and we also find the interpolation in the

genus of the familiar text synopsis. In the use of the various kinds of type too an attempt has been made to follow the plan of the previous editions.

The conservative attitude of the authors is also evidenced by the retaining of the old limits in family and genus as opposed to the practice of segregation. The *Compositae*, *Rosaceae*, and *Leguminosae* still retain their old limits; as also do *Pyrus*, *Potentilla*, *Oenothera*, and *Habenaria*.

The familiar glossary is found at the end of the book, and also a specially prepared index. This index includes family, generic, specific, and popular names, as well as synonyms, all in one, and is a specially commendable feature of the work.

The authors have been assisted in the revision by specialists in certain groups. The *Gramineae* have been revised by Prof. A. S. Hitchcock; the *Orchidaceae* by Mr. Oakes Ames; the Genus *Viola* by Pres. Ezra Brainerd; *Equisetum* and *Isoetes* by Mr. A. A. Eaton; *Senecio* by Dr. J. M. Greenman; and *Crataegus* by Mr. W. W. Eggleston.

The area covered by the Manual has been somewhat changed. The range of this edition is from the Atlantic Seaboard to the western boundary of Minnesota and Iowa and south along the 96th meridian; and from the 48th parallel at the east, and the international boundary at the west, southward to the southern boundary of Kansas, Missouri, Kentucky, and Virginia.

The following statistics are interesting,—

6th Ed.	Genera		Species	
	Native	Introd.	Native	Introd.
Monocots.	170	22	721	64
Dicots.	581	106	1908	380
Total	751	128	2629	444
7th Ed.				
Monocots.	184	26	993	92
Dicots.	596	154	2280	571
Total	780	180	3273	663

The press work is of high class and is a credit to the publishers. Especially is this true when the task of condensing 926 pages into a book of convenient size is considered. A leather-covered pocket edition is in press.

As a whole the work is fully up to the standard of Gray's Manuals,

and is a distinct credit to the already well known reputation of the editors.

It is learned from the publishers that the exact date of issue was 18 September, 1908.

WELLESLEY, MASSACHUSETTS.

NEW STATIONS FOR FERNS IN VERMONT.—The writer had the good fortune to find within a mile from this city in June a swamp containing several hundred plants of *Woodwardia Virginica* (L.) Sm., thus establishing a third station in Vermont for this interesting fern, the others being Fort Ethan Allen pond, near Burlington, and a bog in Franklin. The circumstances under which the *Woodwardia* was growing here are rather interesting. The bog is of the typical sphagnum type, situated between two ledges, at perhaps 700 feet elevation. The hill on which it is found shelters a large pond bordered by a sphagnum bog, evidently a typical place for *Woodwardia*, yet not a plant of the fern is to be found there although it is only a few hundred feet from the new station. Another interesting fern to be found in the *Woodwardia* bog and one which I have never before seen in Vermont is *Osmunda cinnamomea* var. *incisa*. About half of a large number of plants of this *Osmunda* growing in the bog show well incised pinnae. The effect of these cut pinnae on the general appearance of the frond is very pretty. None of the incised form of *O. cinnamomea* grows in the other bogs on the hill. A number of botanists to whom I have showed the incised form of cinnamon fern expressed the belief that it would not reproduce true to parent but the finding of so many plants of the fern in the bog looks as though it were something more than a freak.—GEORGE L. KIRK, RUTLAND, VERMONT.

To collectors and those who possess herbaria within the region covered by Gray's Manual it will be of interest to learn that a Check List of the new (7th) edition has been prepared by Miss Mary A. Day, Librarian of the Gray Herbarium, Cambridge, Massachusetts. It is of pocket size and will be found convenient alike for field notes and exchange records.

Vol. 10, no. 117, including pages 149 to 172 was issued 30 September, 1908.